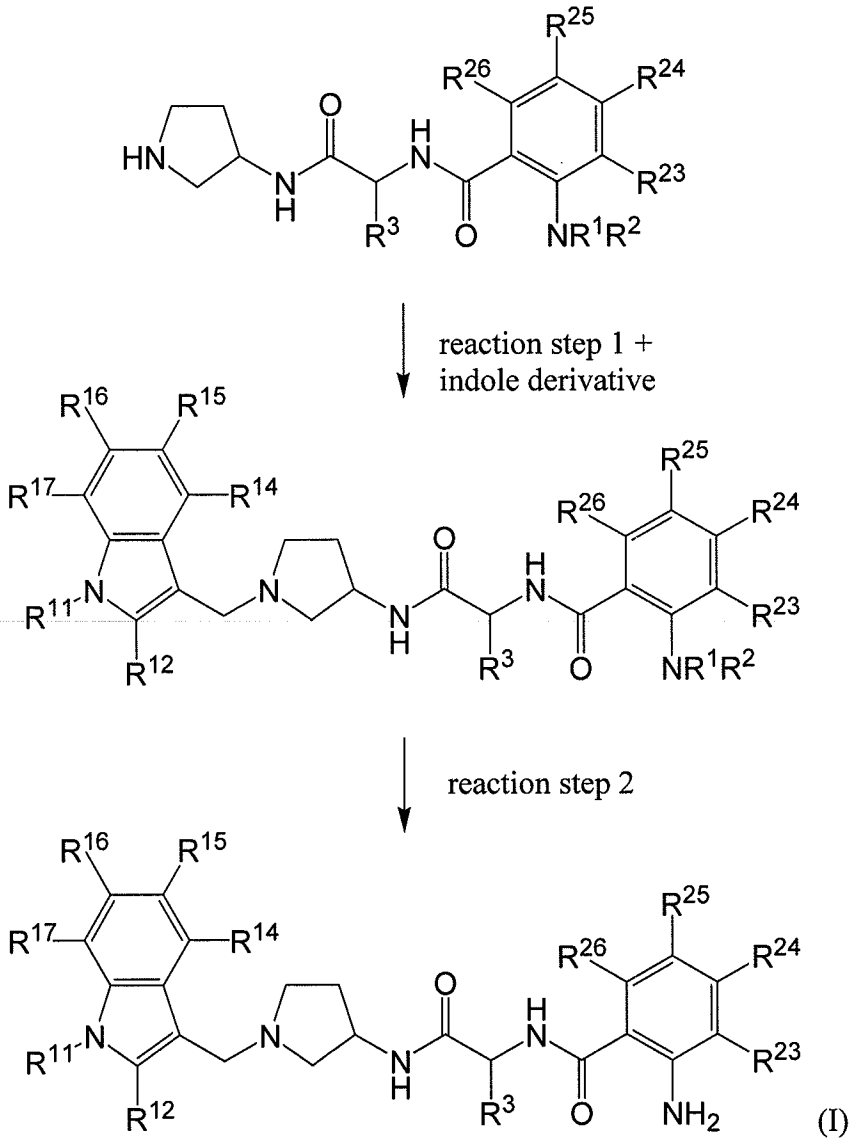
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. **(currently amended):** A method for producing aminopyrrolidine derivatives of formula (I), or salts thereof, comprising reaction steps 1 and 2, wherein step 1 is conducted in the presence of one or plural reagents selected from the group consisting of formalin, paraformaldehyde and trioxane, wherein the indole derivative in reaction step 1 is not substituted at the 3-position ~~in the presence of a synthon of formaldehyde~~ and wherein reaction step 2 is unnecessary if both R^1 and R^2 are hydrogen:



(I)

wherein

R^1 and R^2 represent independently hydrogen or a protecting group for amino group (wherein R^1 and R^2 may, taken together, form a cyclic structure);

R^3 represents hydrogen or C_1–C_6 alkyl;

R^{11} represents hydrogen, C_1–C_6 alkyl or C_2–C_7 alkanoyl;

R^{12}, R^{14}, R^{15}, R^{16} and R^{17} represent independently hydrogen, halogen, optionally halogenated C_1–C_6 alkyl, optionally halogenated C_1–C_6 alkoxy, hydroxyl or C_2–C_7 alkoxycarbonyl; and

R^{23}, R^{24}, R^{25} and R^{26} represent independently hydrogen, halogen, optionally halogenated C_1–C_6 alkyl, optionally halogenated C_1–C_6 alkoxy or hydroxyl; and

wherein the ~~synthon of formaldehyde~~the reagent is at least one selected from the group consisting of formalin, paraformaldehyde and trioxane.

2. (original): The production method according to claim 1, wherein the protecting group for amino group as R^1 or R^2 is methoxycarbonyl, *t*-butoxycarbonyl, benzyloxycarbonyl, allyloxycarbonyl, formyl, acetyl, benzoyl, methyl, ethyl, allyl, benzenesulfonyl or phthaloyl, wherein, when said protecting group for amino group contains an aromatic ring, the aromatic ring may be optionally substituted with one or more of nitro, amino, C_1–C_6 alkyl, C_1–C_6 alkoxy or halogen.

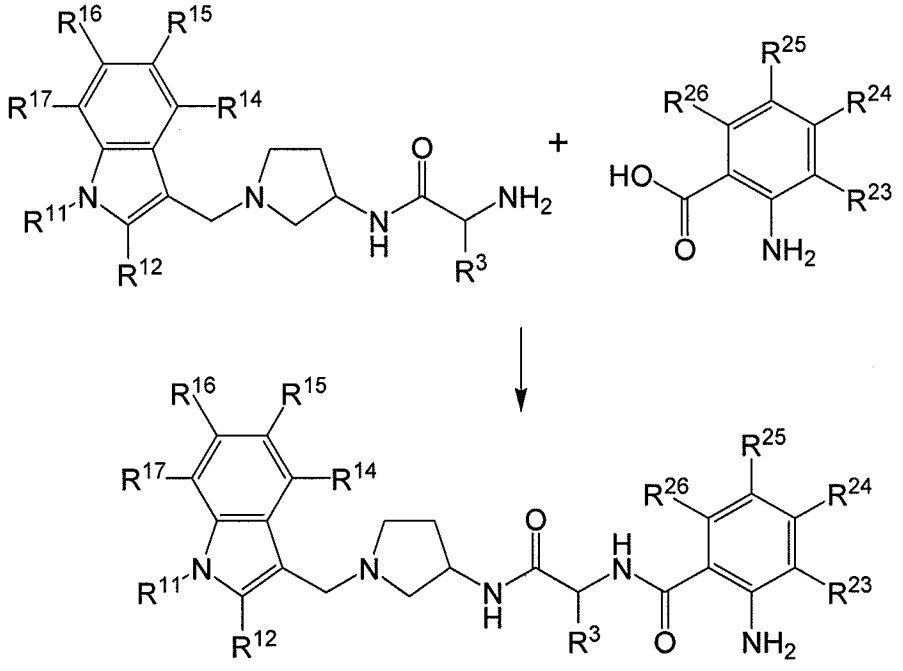
3. (original): The production method according to claim 1, wherein either of R^1 and R^2 is hydrogen and the other is *t*-butoxycarbonyl.

4-6. (canceled).

7. (previously presented): The production method according to claim 1, wherein reaction step 2 is removal of the protection group for the amino group by acid hydrolysis.

8. (previously presented): The production method according to claim 1, wherein reaction step 2 involves treatment with hydrogen chloride in organic solvent.

9. (currently amended): A method for producing aminopyrrolidine derivatives or salts thereof, comprising a condensation step represented by the following reaction formula (II), wherein the condensation step is performed by treatment with an anthranilic acid derivative in amixed solvent of aprotic solvent and C_{1-3} alcohol in the presence of a condensing agent:



(II)

wherein

R^3 represents hydrogen~~ or C_1–C_6 alkyl~~;

R^{11} represents hydrogen~~, C_1–C_6 alkyl or C_2–C_7 alkanoyl~~;

R^{12}, R^{14}~~,~~ and R^{15} represent independently hydrogen;~~,~~

R^{16} represents hydrogen or a methyl group; ~~and~~

R^{17} ~~represent~~ represents independently hydrogen, halogen, optionally halogenated C_1–C_6 alkyl, optionally halogenated C_1–C_6 alkoxy, hydroxyl or C_2–C_7 alkoxycarbonyl; ~~and~~

R^{23}, R^{24}~~, R^{25}~~ and R^{26} represent independently hydrogen~~, halogen, optionally halogenated C_1–C_6 alkyl, optionally halogenated C_1–C_6 alkoxy or hydroxyl~~; and

R^{25} represents a trifluoromethoxy group.

10. (original): The production method according to claim 9, wherein the condensing agent is one or more of a compound selected from 1,3-dicyclohexylcarbodiimide, isobutyl chloroformate, pivaloyl chloride, isovaleryl chloride, 1-ethyl-3-(3-dimethylamino-propyl)carbodiimide, 1-cyclohexyl-3-morpholinoethylcarbodiimide, 1-cyclohexyl-3-(4-diethylaminocyclohexyl)carboximide, *N*,*N*'-carbonyldiimidazole and 2-chloro-1,3-dimethylimidazolinium chloride.

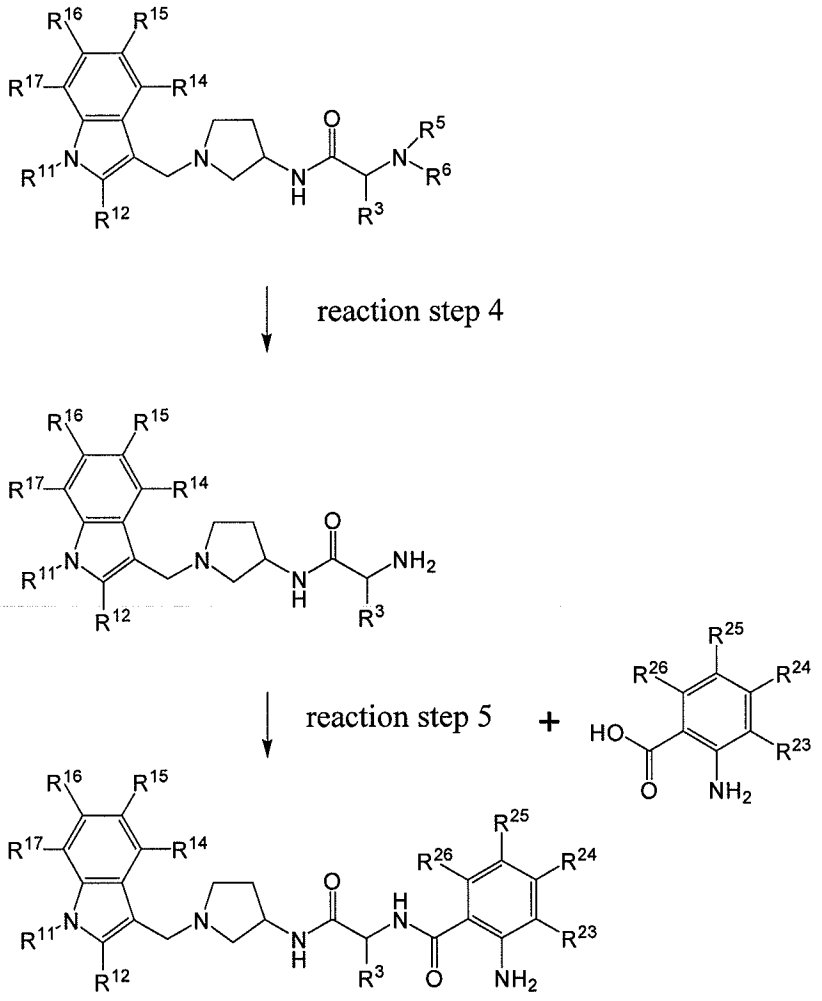
11. (original): The production method according to claim 9, wherein the condensing agent is 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride.

12. (previously presented): The production method according to claim 9, wherein, in said condensation step, are additionally used one or more of an additive selected from *p*-nitrophenol, hydroxysuccinimide, hydroxyphthalimide, 1-hydroxy-1,2,3-benzotriazole, 3-hydroxy-4-oxo-3,4-dihydro-1,2,3-benzotriazine, *N*-hydroxy-5-norbornene-2,3-dicarboximide and ethyl 2-hydroxyimino-2-cyanoacetate.

13. (previously presented): The production method according to claim 9, wherein, in said condensation step, 1-hydroxy-1,2,3-benzotriazole is additionally used as an additive.

14. (previously presented): The production method according to claim 9, wherein, in said condensation step, triethylamine is additionally used.

15. (previously presented): The production method according to claim 9, which further comprises a deprotection step represented by the following reaction step 4:

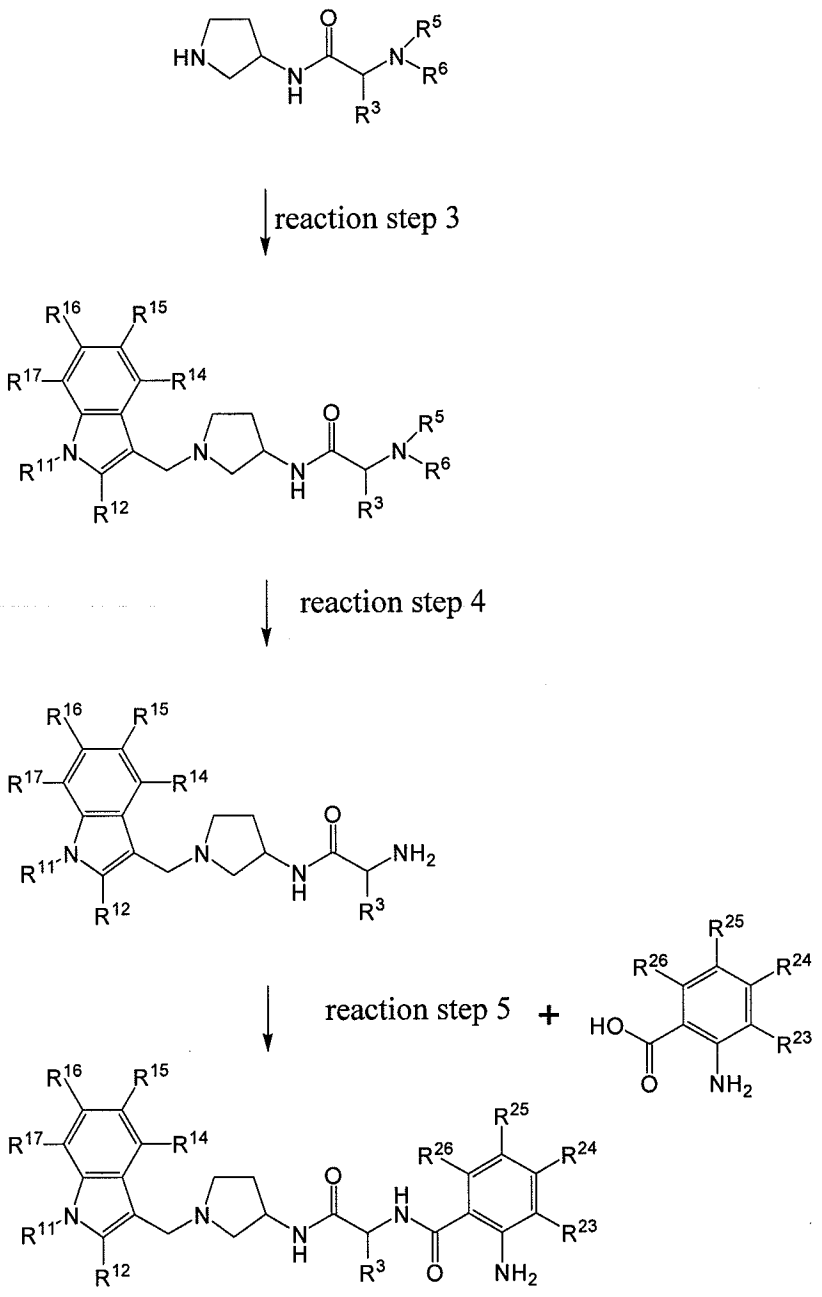


wherein R^3, R^{11}, R^{12}, R^{14}, R^{15}, R^{16}, R^{17}, R^{23}, R^{24}, R^{25} and R^{26} are as defined in reaction formula (II);

R^5 and R^6 represent independently hydrogen or a protecting group for amino group (wherein R^5 and R^6 may, taken together, form a cyclic structure) except for the case where R^5 and R^6 are simultaneously hydrogen.

16. (original): The production method according to claim 15, wherein said reaction step 4 involves treatment with hydrogen chloride in organic solvent.

17. (previously presented): The production method according to claim 15, which further comprises an introduction step of an indole derivative represented by reaction step 3:



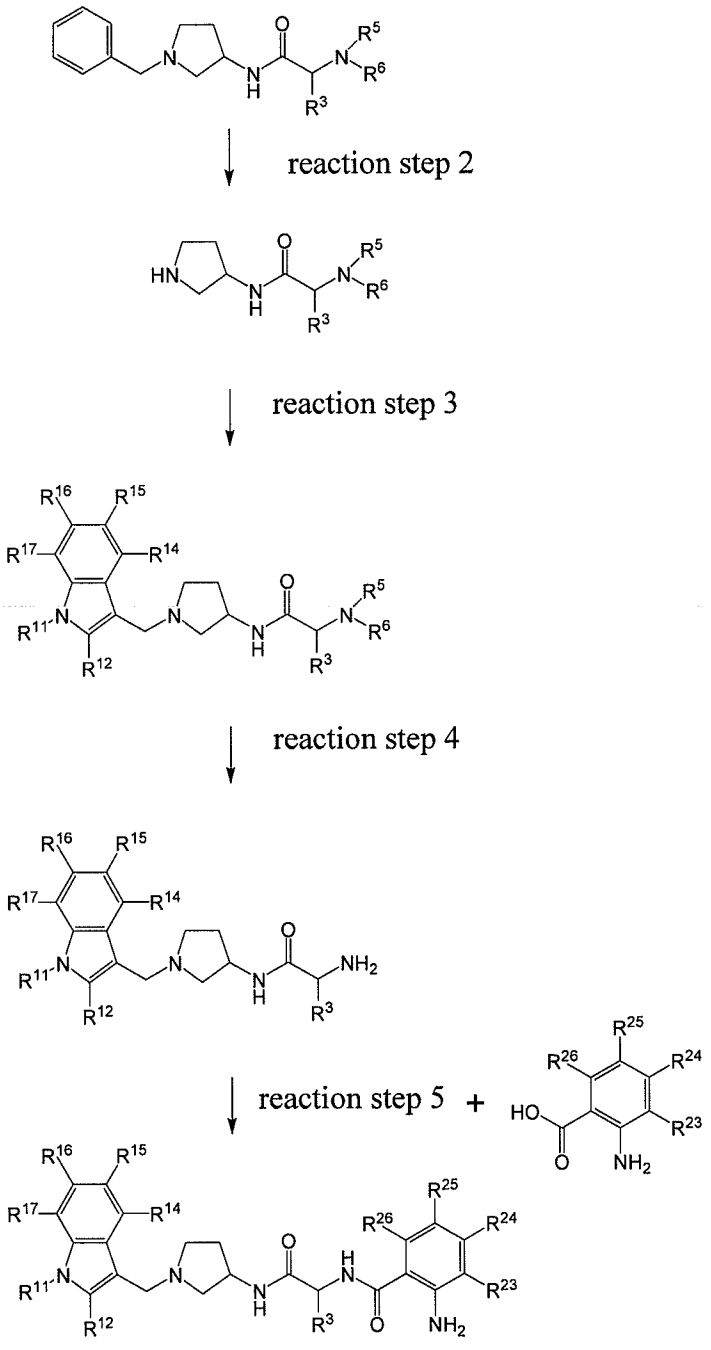
wherein R^3, R^5, R^6, R^{11}, R^{12}, R^{14}, R^{15}, R^{16}, R^{17}, R^{23}, R^{24}, R^{25} and R^{26} are as defined above.

18. (currently amended): The production method according to claim 17, wherein said reaction step 3 is reaction of an indole derivative having no substituent at the 3-position in the presence of ~~a synthon of formaldehyde~~one or plural reagents selected from the group consisting of formalin, paraformaldehyde and trioxane.

19. (currently amended): The production method according to claim 18, wherein the ~~synthon of formaldehyde~~reagent is formalin.

20. (original): The production method according to claim 17, wherein said reaction step 3 is reaction of an indole derivative substituted with a dialkylaminomethyl group at the 3-position.

21. (previously presented): The production method according to claim 17, which further comprises a removal step of a benzyl group represented by the following reaction step 2:

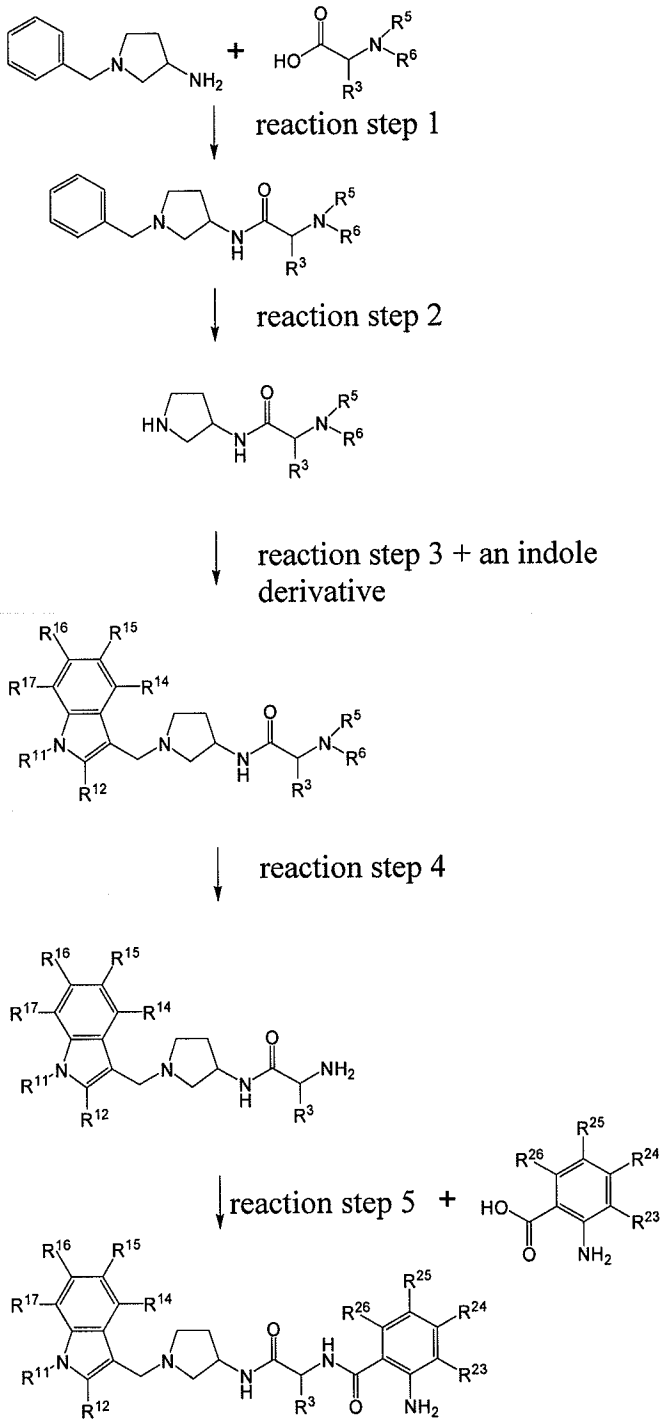


wherein R^3, R^5, R^6, R^{11}, R^{12}, R^{14}, R^{15}, R^{16}, R^{17}, R^{23}, R^{24}, R^{25} and R^{26} are as defined above.

22. (original): The production method according to claim 21, wherein, in said reaction step 2, a hydrogen source is used in the presence of palladium catalyst.

23. (original): The production method according to claim 22, wherein the hydrogen source is gaseous hydrogen.

24. (previously presented): The production method according to claim 21, which further comprises a condensation step with an amino acid derivative represented by the following reaction step 1:



wherein R^3, R^5, R^6, R^{11}, R^{12}, R^{14}, R^{15}, R^{16}, R^{17}, R^{23}, R^{24}, R^{25} and R^{26} are as defined above.

25. (original): The production method according to claim 24, wherein, in said reaction step 1, are used one or more of a condensing agent selected from 1,3-dicyclohexylcarbodiimide, isobutyl chloroformate, pivaloyl chloride, isovaleryl chloride, 1-ethyl-3-(3-dimethylamino-propyl)carbodiimide, 1-cyclohexyl-3-morpholinoethylcarbodiimide, 1-cyclohexyl-3-(4-diethylaminocyclohexyl)carboximide, *N*,*N*'-carbonyldiimidazole and 2-chloro-1,3-dimethylimidazolinium chloride.

26. (original): The production method according to claim 24, wherein, in said reaction step 1, 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide is used as a condensing agent.

27. (previously presented): The production method according to claim 24, wherein, in said reaction step 1, are additionally used one or more of an additive selected from *p*-nitrophenol, hydroxysuccinimide, hydroxyphthalimide, 1-hydroxy-1,2,3-benzotriazole, 3-hydroxy-4-oxo-3,4-dihydro-1,2,3-benzotriazine, *N*-hydroxy-5-norbornene-2,3-dicarboximide and ethyl 2-hydroxyimino-2-cyanoacetate.

28. (previously presented): The production method according to claim 24, wherein, in said reaction step 1, 1-hydroxy-1,2,3-benzotriazole is additionally used as an additive.

29. (previously presented): The production method according to claim 24, wherein, in said reaction step 1, triethylamine is additionally used.

30. (previously presented): The production method according to claim 15, wherein the protecting group for amino group as R^5 and R^6 is methoxycarbonyl, *t*-butoxycarbonyl, benzyloxycarbonyl, allyloxycarbonyl, formyl, acetyl, benzoyl, methyl, ethyl, allyl, benzenesulfonyl or phthaloyl, wherein, when said protecting group for the amino group contains an aromatic ring, the aromatic ring may be optionally substituted with one or more of nitro, amino, C_1 –C_6 alkyl, C_1 –C_6 alkoxy or halogen.

31. (previously presented): The production method according to claim 15, wherein either of R^5 and R^6 is hydrogen and the other is *t*-butoxycarbonyl.

32. (previously presented): The production method according to claim 1, wherein R^3 is hydrogen.

33. (previously presented): The production method according to claim 1, wherein R^{11}, R^{12}, R^{14}, R^{15} and R^{17} are all hydrogen.

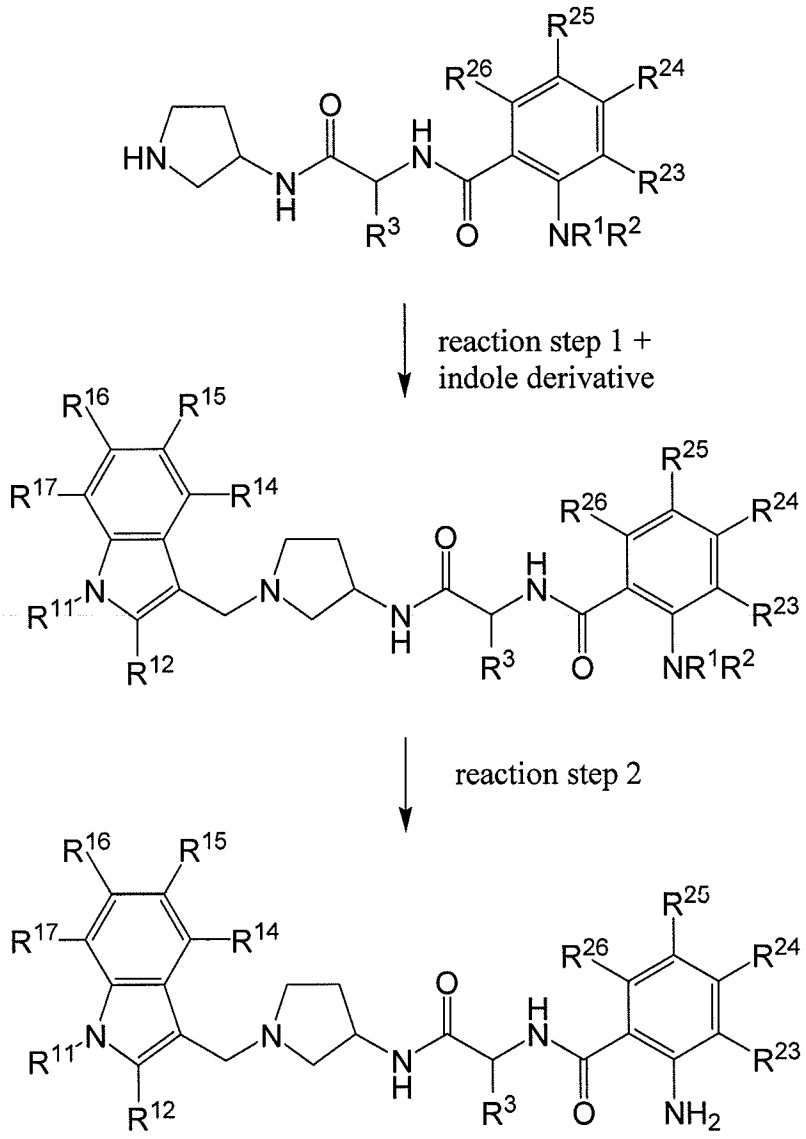
34. (previously presented): The production method according to claim 1, wherein R^{16} is methyl.

35. (previously presented): The production method according to claim 1, wherein R^{23}, R^{24} and R^{26} are all hydrogen.

36. (previously presented): The production method according to claim 1, wherein R^{25} is trifluoromethoxy.

37-52. (canceled).

53. (previously presented): A method for producing aminopyrrolidine derivatives of formula (I), or salts thereof, comprising reaction steps 1 and 2, wherein the indole derivative in reaction step 1 has a dialkylaminomethyl group at the 3-position and wherein reaction step 2 is unnecessary if both R^1 and R^2 are hydrogen:



wherein

R^1 and R^2 represent independently hydrogen or a protecting group for amino group (wherein R^1 and R^2 may, taken together, form a cyclic structure);

R^3 represents hydrogen or C_1–C_6 alkyl;

R^{11} represents hydrogen, C_1–C_6 alkyl or C_2–C_7 alkanoyl;

R^{12}, R^{14}, R^{15}, R^{16} and R^{17} represent independently hydrogen, halogen, optionally halogenated C_1–C_6 alkyl, optionally halogenated C_1–C_6 alkoxy, hydroxyl or C_2–C_7 alkoxycarbonyl; and

R^{23}, R^{24}, R^{25} and R^{26} represent independently hydrogen, halogen, optionally halogenated C_1–C_6 alkyl, optionally halogenated C_1–C_6 alkoxy or hydroxyl.

54. (previously presented): The production method according to claim 53, wherein the protecting group for amino group as R^1 or R^2 is methoxycarbonyl, *t*-butoxycarbonyl, benzyloxycarbonyl, allyloxycarbonyl, formyl, acetyl, benzoyl, methyl, ethyl, allyl, benzenesulfonyl or phthaloyl, wherein, when said protecting group for amino group contains an aromatic ring, the aromatic ring may be optionally substituted with one or more of nitro, amino, C_1–C_6 alkyl, C_1–C_6 alkoxy or halogen.

55. (previously presented): The production method according to claim 53, wherein either of R^1 and R^2 is hydrogen and the other is *t*-butoxycarbonyl.

56. (previously presented): The production method according to claim 53, wherein reaction step 2 is removal of the protection group for the amino group by acid hydrolysis.

57. (previously presented): The production method according to claim 53, wherein reaction step 2 involves treatment with hydrogen chloride in organic solvent.